Using Electronic Document Management to Streamline Project Documentation

Certified Public Manager Project

February 04, 2013

South Carolina Department of Natural Resources
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I. Introduction

State Governments generate large volumes of documents that can often be overpowering when processing constituent's transactions. Managing these documents has been a longtime challenge for state governments. Some state government agencies have established libraries for these documents which require documents to be checked out when being reviewed. Consequently, if a document that is currently checked out is needed by someone, this would result in locating who has checked out the document. Tracking down the documents needed could take hours if not days. This process is very time consuming and causes inefficiency that depletes productivity and causes huge delays. Solutions to government document management processes have become pertinent for state government agencies to implement. With the growing demand to do more with less, state government agencies are forced to provide strategies that will streamline document management.

II. Problem Statement

The South Carolina Department of Natural Resource's Engineering Section is the primary component of the South Carolina Boat Access Program. This program provides technical assistance to state, county, and municipal government entities by providing professional engineering services and oversight in the design, construction, and renovation of boating access facilities within the state. In addition to boating access facilities, the Program also provides design and construction management assistance for other water recreational related facilities, such as fishing piers and docks, as well as general engineering assistance to other groups within the Agency as it relates to facilities management and construction. (South Carolina Department of Natural Resources, FY 2010-11 Annual Accountability Report)

During FY 2010-11, the Engineering Section completed 17 projects related to boating access. These projects included repairs to existing facilities, complete renovations to existing facilities, as well as new construction of ramps and docks. The total cost of all of these projects was $1.3 million. (South Carolina Department of Natural Resources, FY 2010-11 Annual Accountability Report) The projects completed generated hundreds of engineering project documents in various formats and sizes. These documents contained information about project events, contracts, construction plans and specifications, property plats, correspondence, testing reports, and photographs. The data recorded on these documents contain important information that needed to be securely preserved that can be analyzed and used to assist with making important project decisions.

Currently, these project documents are stored in file cabinets, local hard drives, computer server share drives and are managed as unstructured data stored in blueprints, engineering drawings, property plats, e-mails, legal documents and other digital formats and are not located in a centralized repository. Often these documents are created by other parties such as the state engineer's office, outside engineering firms and other state agencies. As a result of being, unstructured data is scattered across multiple folders, platforms and devices that creates a lack of visibility of what information has been received. Engineering project managers can spend a great deal of time looking through several files and offices trying to locate critical documents that may be maintained and stored at regional offices throughout the state. In addition, collaboration is limited because information cannot be easily shared since documents are in paper format and cannot be accessed from multiple locations simultaneously. Some documents may be misfiled or lost and difficult to access because of lack of standardization of naming

conventions. This data needs to be pulled together, organized and presented as information. (http://www.globalgraphics.com/technology/knowledge-management/)

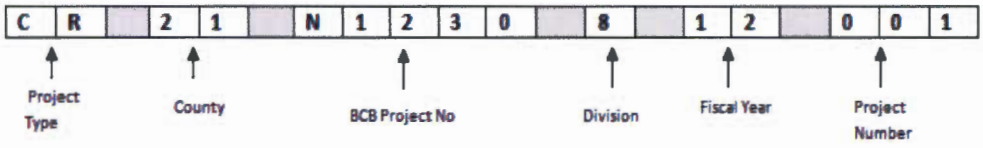
This Certified Public Manager project will investigate the Engineering project document management process and recommend an electronic document management solution that will support streamlining the project document management process and improve general operations by utilizing electronic document management technology. This solution will focus on streamlining workflow, providing document indexing, creating collaborative work environments and providing security access controls. (http://rm.sc.gov/electronicrecords/ERmanagementguidelines/Documents/ermGLOS.pdf)

III. Data Collection

Interview

During the initial interview with the engineering department, it was discovered that there was no engineering project naming convention for project numbers. This contributed to variations in project names which affected the ability to easily locate project documents when needed. As a result, it was decided that a project naming convention should be established. The purpose of the project naming convention is to provide a mechanism for communicating key information to the user at a glance. Putting key project information in the project name has several benefits, (1) it will assist your engineering project team members to quickly identify the project and (2) this information will assist with the storage/retrieval of the project documents. (http://onprojects.net/2007/08/24/document-naming-convention/) In addition, the project naming nomenclature will assist with project documentation efficiency and assist with providing effective project document management. (http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_033940.pdf)

The following project naming convention was proposed for engineering projects:



The following project data was gathered to assist with defining a project naming convention for engineering projects:

The 1st and 2nd digits represent the project type:

Project Types	
AR – Archery Range	GA- General Access
BA- Boat Access	PR – Pistol Range
CN – Construction New	SR – Shooting Range
CR-Construction Renovation	
FP – Fishing Pier	

Table 1: Project Types

The 3rd and 4th digits represent the South Carolina county code:

County Code
21 – Lexington
40 – Richland

Table 2: County Code

The 5th through 9th digits represent whether the South Carolina Budget and Control Board numbering system:

BCB Numbering System
Ex. N1230

Table 3: BCB Numbering System

The 10th digit represents the Department of Natural Resources Division requesting the project:

SCDNR Division Code	
0 – County	3-Land Water and Conservation
1 – Agency	4- Wildlife and Freshwater Fisheries
2 – Law Enforcement	

Table 4: SCDNR Division Code

The 11th and 12th digits represent the fiscal year the project was started:

Fiscal Year	
13 -2013	14- 2014

Table 5: Fiscal Year

The 13th through 15th digits represent the project sequence number:

Project Sequential Number
001 -1st project for Fiscal Year
002- 2nd project for Fiscal Year

Table 6: Project Sequential Number

Document Management Survey

In order to evaluate the engineering department's document management requirements and obtain clear objectives, it was necessary to consider the needs of various stakeholders in the engineering department. To obtain requirements a document management questionnaire was used to collect information and data for the configuration of a document management solution. Three staff members were requested to complete the questionnaire. Two Engineers completed the 19 question questionnaire. The survey questions can be referenced in Appendix A. The survey questions were aimed at helping to define a document management solution that would easily integrate with a facility management system. It was important to identify what business documents are created and for the engineering projects and why these documents were created. In addition, it was necessary to establish if the project documentation was part of a process and or business workflow. Identifying the type of media and file types for the documents along with the sizes of the documents were also very critical. This information assisted with determining what type of capture profiles and or scanners would be needed for importing and or scanning documents into the document management system. Additionally, the questionnaire provided information about the origination of these documents and what type of documents and data are being collected within the documents. Identifying these components helped to establish

document types and document search and retrieval indexes in the document management computer system.

Project Document Sampling Data

A random document sampling for five different projects was taken to gather data and document types. These five different projects represent the majority of the types of projects handled by the engineering group. The main objective of this sample was to ensure that it represented the overall project types accurately. (Systems Analysis and Design, Shelly Cashman Rosebblatt) The five projects consisted of a new construction project, a landing/boating dock, a shooting range, a boat ramp and a renovation project. The data collected were inputted into a matrix. The matrix is included in Appendix B. This matrix was used to systematically identify, analyze and rate the presence and strength of relationships between the document type and the project type. (The Memory Jogger 2, Tools for Continuous Improvement and Effective Planning) In addition, the matrix was to be used to make comparison and selection of the document types to be configured in the document management system and determine what documents are being collected. This information could be used by project managers to ensure all required documents have been received for a project. This data collected clearly represented patterns between document types and project types.

IV. Data Analysis

Document Management Survey

The data from the 19 question questionnaire indicated the objectives for the document management project are to electronically store all documents and index for easy retrieval. In addition to maintaining a document repository that will provide a history of events that has taken place.

The survey determined that there are several different types of business documents that are created for projects. The document types noted were letters, memos, spreadsheets, contracts, construction plans, specifications, property plats and engineering firm documents. These business documents are created for traceability of what project activity has occurred and to provide audit of the expenditure of funds and project activity.

The respondents provided information relating to the business workflow and process for the documents. The business workflow follows the project management methodology reference in Figure 1. (http://www.lce.com/Project_Management_335.html)

It was noted that the workflow varied depending on the project. However, in most cases the survey respondents conveyed that after a request for engineering services is received, preliminary work is performed to determine what necessary steps are needed. Once the preliminary work is completed and necessary actions are determined, funding for the project is approved, contracts are signed and the contract agreement is executed.

The data collected from the respondents from the 19 question questionnaire estimated that there are currently 550 different project files stored in approximately 15 – 4 drawer file cabinets dated back to 1981 that are currently be accessed by internal staff. This estimate equates to approximately 600,000 documents in the engineering department's collection that have been created by the engineering office, received by mail, by fax and by email that can be converted to digital format to be securely stored on servers and accessed from the document management system. The project files consisted of different document types such as construction drawings, plans, maps, contracts, letters, memos, testing reports, pictures, financial documents and other documents. There are several different document sizes that exist in the collection as listed in Table 7.

US, Imperial paper	Size	
	(mm)	*(inches)*
US Government	203.2 x 279.4	8 x 11
Ledger, ANSI B	279.4 x 431.8	11 x 17
Legal	215.9 x 355.6	8 1/2 x 14
Letter, US A, ANSI A	215.9 x 279.4	8 1/2 x 11
Photo 4 x 6	102 x 152	4 x 6
Tabloid, US B, ANSI B	279.4 x 431.8	11 x 17
Other		18 x 24
Other		>= 24x 36

Table 7: Paper Sizes (http://www.engineeringtoolbox.com/office-paper-sizes-d_213.html)

The document collection also includes different file types as listed in Table 8.

File Extension	Information
Doc	Microsoft Word Document
Xls	Microsoft Excel Document
Tif	Tagged Imaged Format
Jpg	JPEG Image
Pdf	Portable Document Format File

Table 8: File Extensions

The current document collection is filed by county and individual project names in the file cabinets. Documents that are born electronic are saved by the year, project name and county that is saved to local and network drives. This variation in indexing schema for the documents makes it very difficult to locate documents for the engineering staff, the boat access section or other internal staff.

V. Implementation

The data collected and evaluated has been used to assist in the implementation of an electronic document solution. Based on this data, the SCDNR Technology Development Program has been tasked to provide an electronic document system configuration that will serve as a secure document repository for engineering project documents.

The document management system solution configuration for the engineering project documents will enable instant secure access to critical documents for the engineering department. The electronic document management system will serve as a centralized repository for filing, indexing, storing and retrieving engineering project documentation. The system will enable project managers the ability to capture all types of content easily from virtually any source enterprise-wide. The system will eliminate the need to leave your desk and sort through filing cabinets, hoping the document you need is stored correctly by making information accessible immediately to the user through a secure platform. (http://www.perceptivesoftware.com/products/perceptive-capture/document-imaging) Document imaging will be used to convert document hard copies to digital format. Document imaging has become an essential technology for organizations today, providing structure to all of the unmanaged information needed to make processes more efficient and people more productive. (http://www.perceptivesoftware.com/products/perceptive-capture/document-imaging)

The department will be provided with Fujitsu scanners that will have a cost of $ 838.18 each. System software capture licenses will also be needed that will have a cost of $ 395.00 for each scanner deployed. These scanners will enable converting of hard copy documents to digital that will be stored in the electronic document management system. Document capture profiles will be configured that will allow users to scan hard copies and import from multiple sources and documents stored on local and remote directories into SCDNR document management system. These capture profiles will allow for single mode and batch mode capturing which will contribute to maximizing productivity. The batch mode capturing configuration will allow for documents to be captured in groups. Users will also have the ability to import documents such as e-mails into ImageNow without scanning first by using the print button within the software

program that is displaying the documents. Additional software licenses will not be needed as the engineering department will utilize concurrent software licenses already purchased by the agency for connection to the document management system. The documents will be assigned document keys or index values that will enable the documents to be stored in the electronic repository and searched and retrieved as needed. The proposed document keys to be used for storage and retrieval of documents are presented in Table 9.

Document Keys	
Project Name	Fiscal Year
Project Number	County
Description	

Table 9: Document Keys

These document keys will improve customer service by providing prompt access to information that is stored within the documents.

Documents will also be grouped by a document type. The proposed documents types that can be assigned are presented Table 10.

Document Types	
Eng_BudgetAuthority	Eng_Correspondence
Eng_Construction	Eng_Financial

Table 10: Document Types

Once the documents are scanned and or imported and document keys are assigned they will be saved as images and will be stored in the electronic document system's engineering drawer and temporarily reside in the engineering work queue. The drawer is used to separate documents into local categories. It is the first hierarchical level for user's security for documents. Only users granted privileges to this drawer will have access to view these documents. The document management security features will ensure only user granted privileges have access to the

electronic documents that contain project information. Document Management system privileges will be assigned to users that will grant, revoke or deny system privileges. The engineering project owner will work with the EDMS Administrator to determine what privileges should be granted before implementation.

The document management system will also facilitate project collaboration and decrease processing time because multiple project managers will be able to access the same document at the same time. (http://copeco.com/blog/?p=484) Project Managers will be able to assist customers with questions faster as a result being able to instantly retrieve information from their desktop computer which connect authorized system users, processes and information that move projects. (http://www.perceptivesoftware.com/)

An engineering workflow process has been configured that currently consist of a project work queue that will serve as a document repository. Documents will enter this queue to be staged after being scanned or imported and document keys being assigned before routing into the document management repository. This process is presented in Figure 2. Users will be able to search and retrieve documents utilizing the documents keys by means of preconfigured views.

The EDMS Administrator has scanned a sample engineering project into the document management system. This project will serve as a prototype for demonstration of the system. A Microsoft PowerPoint presentation will be used to assist with graphically presenting the solution details. In additional, live hands on system demonstration will be presented to the engineering group showing how the system works.

Nevertheless, it has been challenging to schedule a date and time to demo the document solution demonstration due to fact that the engineering staff spends most of their time in the field. Once

the demo has been presented, it is anticipated minor updates to the system solution will be needed. While these updates are being performed, the system security requirements will be defined and the document management software will be installed on requested workstations. The consequent steps will include end user training that will consists of one day in classroom training and follow up with one on one training as needed. Once the training is complete end user testing of the configuration will be performed for two weeks. One week will be allocated to required updates and testing of updates identified during the end user testing. Once the configuration is stabilized, full implementation of the engineering project document management solution will be implemented. The technology group will assist the engineering group by providing document management services to assist with scanning and importing documents. It is projected four additional weeks are needed before full implementation. However, I foresee some obstacles related to engineering staff adapting to integrating document management into their daily routines. I expect staff will find it challenging categorizing documents into the correct document type and utilizing the project naming convention for new projects. Nevertheless, to benefit from this solution it is critical the engineering department integrates the document management process into the standard operation.

The success of the project will be measured by how well the end users accept the quality and adapt to the document management solution. Post implementation interviews with engineering staff will be conducted to evaluate satisfaction of the document management solution. The post interview will be used to determine if the solution lead directly to improved efficiency or effectiveness and better prepare the organization for future challenges. (http://www.computerworld.com/s/article/109087/Evaluating_Project_Success_Failure_and_Everything_in_Between)

VI. Summary and Recommendations

This project uncovered how managing documents can be a daunting task in state governments. It is not easy for state governments to manage various types of documents in various formats when trying to adapt to changing economic times. The volume of documents generated for most engineering project is massive and with continuation of the need to validate government spending, the requirements of documents will continue to grow. State Governments must start now to improve their document management processes and improve information management.

VII. Appendix

Appendix A. Survey Questions

South Carolina Department of Natural Resources
Document Management Questionnaire
1. What are the objectives for your document management project?
2. What business documents are created? Who creates the documents?
3. Why are the documents listed in #2 created?
4. What is the business process/business workflow for the documents?
5. Where do the documents come from? (mail, fax, e-mail)
6. How many documents do you estimate are part of your collection?
7. What different document types do you have? (plans, maps, contracts)
8. What are the sizes of the hard copy documents? 8x11, 8x14 Are the documents single or double sided?
9. If there are electronic documents, what are the file extensions?
10. Will there be any backfile scanning and/or day forward scanning?
11. What kind of information do the documents contain?
12. How are the documents stored? i.e. file cabinets, computer share drives
13. Where is the physical storage area (on-site and/or off site)?
14. What is the media for storage? (paper, electronic, mixed)
15. What is the method of indexing the documents? What is the method for retrieving the information (name)?
16. What are the record retention requirements for the documents?
17. Who retrieves the information? How often are the documents retrieved?
18. Is access to the documents internal, external, or both?

Appendix B. Project Document Sampling Data

Document Types	Categories	New Construction	Landing/Boating Dock	Shooting Range	Boat Ramp	Renovation Belfast
AP Request	Payable	x				
Affidavit of Publication	Affidavit	X	X		x	
Affidavit of Ownership or Council	Affidavit	x	X			
Affidavit of Receipt	Affidavit			X		
Agreement	Agreement	x	X	X		
Application and Certification for Payment	Financial	X		x		
Army Permit	Permit	X				
AIA A101 Standard Form Agreement Between Owner and Contractor	Contract Document	X	X	X		
AIA G702 Application and Certificate for Payment	Contract Document	X	X			
AIA G703 Continuation Sheet	Contract Document	X	X			
Amendment to the Lease	Contract Document	X	X			
Amendment to Agreement	Contract Document			x		
Annual Work Plan	Construction Document	X	X			
Application	Application	X	X			
Application for Encroachment Permit	Permit			x		
Application for Department of the Army Permit	Permit	X	X			
Application for Federal Assistance	Permit	X	X		x	
Asbestos Survey	Engineering Test			x		
Bid Bonds	Contract Document			X		
Bid Opening Tabulation Form	Bid Document	X	X	x	x	
Bidder's List	Bid Document		X	x		
Builder's Risk Policy	Builder's Risk Policy	X		x		
Building Inspection Report	Construction Document			x		
Building Permit	Permit	X				
Budget & Control Board Permanent Improvement Project Request	BCB Project Request		X			
Budget Information	BCB Project Request				x	
Certificate of Liability Insurance	Certificate	X	X			
Certificate of Substantial Completion	Certificate		X			
Certificate of Treatment	Certificate		X			
Certificate of Payment	Certificate			x		
Certified Bid Tabulation	Bid Document		X			
Completion Report	Report		X			
Commercial Building Permit Application	Application			x		
Concrete Test Report	Engineering Test		X	x		
Change Order to Original Contract	Contract Document			x		
Check Request Form	Financial			x	x	

Certificate of Full or Partial Substantial Completion	Contract Document	X	X			
Certification Regarding Illegal Immigration	Contract Document	X				
Coastal Zone Consistency Certification &Construction Permit	Permit	X			x	
Consent of Surety Company to Final Payment	Contract Document		X			
Consent of Surety to Reduction in or Partial Release of Retain age	Contract Document	X				
Construction Change Order	Construction Document	X	X	x		
Consent of Surety Company to Final Payment/Power Attorney	Contract Document	X	X	x		
Contract	Contract Document	X	X		x	
Contact for Funding and Administrative	Contract Document	X	X			
Contractor's Affidavit of Payment of Debts and Claims	Affidavit	X	X			
Contractor's Affidavit of Release of Liens	Affidavit	X	X			
Contractor's Warranty	Warranty			x		
Correspondence - Letters	Correspondence	X	x	x	x	
Correspondence - EMAIL	Correspondence	X	X	x	x	
Cost Estimates	Bid Document	X	X			
Cost Proposal Summary	Bid Document	X				
Decision Document for Department of Army Permit	Permit	X	X			
Daily Field Report	Report		X			
Deficiencies Cost Form	Contract Document	X				
Design/Build Contract	Contract Document	X				
Deed of Gift with Right of Reversions	Financial	X				
DHEC Notice of Dept Decision	Permit	X				
DHEC-OCRM Construction Placard Request	Permit		X			
Document Log	Correspondence	X				
Detention Pond Maintenance Plan	Construction Document			x		
DHEC Storm Water Approval	Permit			x		
Drawings	Construction Document	x	x	x	x	x
E_230 Transmittal of Small Professional Services Contract	Contract Document		X	x		
Electrical Application	Contract Document	X		x		
Elevation Data Graphics	Engineering Test	X		x		
Elevation	Engineering Test				x	
Environmental Description	Engineering Test	X	X			
EPA Notice of Termination of Coverage	Construction Document			x		
Estimate	Bid Document		x			
Estimate of New/Revised Project Costs	Bid Document					

Estimated Project Cost	Bid Document					
Executive Directors	Correspondence	X	X			
Evidence of Property Insurance	Construction Document			x		
Fax Copy	Correspondence		X			
Grant Agreement	Memorandum	X		x		
Financial	Financial	X	X			
Field Density Report	Engineering Test			x		
Field Report (Daily Field Report)	Construction Document			x		
Final Pay Application	Financial			x		
Finance Correspondence	**Financial**			x		
Floor plan	Construction Document	X				
	Warranty	X				
Foundation Evaluation PSI Report	Engineering Test	X				
General Conditions	Construction Document	X	X			
Geotechnical Investigation Report	Engineering Test	X		x		
Geotechnical Exploration	Engineering Test				x	
Gradation Curves	Engineering Test	X	x			
Grading & Drainage Plan	Engineering Test			x		
Grant Agreement	Contract Document			x		
G703 Continuation Document from G702 Application	Contract Document			x		
Inspection/Material Testing Order	Building Code Inspection					
Inspection/material Testing Order	Engineering Test		X			
Inspections Comment Form	Engineering Test		X			
Invitation for Construction Bids	Bid Document	X				
Invoice	Financial	X	X			
Joint Public Notice	Contract Document	X				
Joint Bond Review - Attachment	Contract Document					
Joint Federal and State Application	Contract Document		X			
Labor and Material Payment Bond	Construction Document		X			
Laboratory Compaction Test	Engineering Test		X			
Laboratory Data	Engineering Test					
Landscape Warranty	Construction Document	X				
Landlok 300	Construction Document					
Letter Correspondence/Transmittal	Correspondence	X		x		
Lease	Contract Document	X	X			
Lease and Agreement	Contract Document	X				
Map	map	X				
Master Agreement for Inspection Services	Contract Document	X	X			
Meeting Minutes/Meeting Agenda	Correspondence	X				
Memorandum	Correspondence	X			x	
Miscellaneous	Correspondence	X				
Moisture-Density Relationship	Engineering Test	X	X			
Notice of Commencement/Completion Permit	Permit	X			x	

Notice of Intent to Award	Contract Document	X				
Notice of Intent (NOI) Storm water Discharges - DHEC	Engineering Test			x		
Notice to Proceed	Contract Document	X	X			
NsG Data Street	Construction Document			x		
Npdes Construction General Permit	Permit					
Paint Analysis	Construction Document					X
Performance Bond	Bid Document	X				
Permanent Improvement Project Request	Contract Document		x			
Permit Fee	Permit	X				
Photos	photos		x	X		X
Plat	plat	x			x	
Policy Memorandum	Map	x	x			
Preliminary Cost Estimate	Engineering Test	x			x	
Pre- Liollio Meeting	Correspondence	x				
Project Manual	Project Manual	x	x			
Property Insurance Brief	Correspondence		X			
Proposal	Bid Document	X				
Price Proposal	Construction Document			x		
Proposal for Inspection Service	Construction Document	X	X			
Proposal Format	Correspondence	x				
Proofroll Report	Report			x		
Public Notice	Correspondence	x			x	
Purchase Order	Financial	x		x		
Purchase Requisition	Financial			x		
Quote Form	Construction Document		x			
Receiving and Inspection Report	Financial		x	x		
Report of Concrete Compression Test	Engineering Test	x				
Report of Field Compaction Test	Engineering Test	x				
Request for Authority to Execute a Construction Contract	Contract Document	x				
Request for DHEC-OCRM Construction PLACARD	Engineering Test				x	
Request for Change Order	Contract Document	x				
Sales Quotation and Order Form	Contract Document	x				
Site Location Map	map	x	x			
Soil Test Boring Location Plan	Engineering Test	x	x			
State of Account	Financial	x	x	X		
Statement of Account	Financial	x	x			
Weekly Progress Report	Construction Document	x	x			
SCDHEC Construction Authorization	Construction Document	x	x	X		
SC Project Notification & Review System	Construction Document	x	x			
SE310 Invitation for Construction Bids	Contract Document	x	x			
SE310-Certification	Contract Document	x	x			

SE-230 Transmittal of Small Professional Services Contract	Contract Document	x		x		
SE-271 Design Documents Transmittal Form	Contract Document	x		x		
SE-310 Invitation for Construction Bids	Contract Document	x		x		
SE-330 Bid Form	Contract Document	x	x	x		
SE-335 Bid Bond	Contract Document	x	x	x		
SE-355 Performance Bond	Contract Document	x	x			
SE-357 Labor and Material Payment Bond	Contract Document	x	x	x		
SE-370 Notice of Intent to Award	Contract Document	x	x			
SE-380 Request for Authority to Execute a Construction	Contract Document	x	x	x		
SE-390 Notice to Proceed	Contract Document	x	x	x		
SE-480 Construction Change Order	Contract Document	x	x	x		
SE-480 Construction Change Order	Contract Document	x		X		
SE-560C Certificate of Final Completion	Contract Document	x		X		
SE-955 Inspection/Material Testing Order	Contract Document	x		X		
SE-960 Inspection/Material Testing Order Amendment	Contract Document	x		X		
SE-9000 Application for Permit to Develop in a Flood Hazard Area	Contract Document	x		X		
Special Inspection Daily Field Report	Construction Document	x		X		
Storm Drainage Design Report	Construction Document	x		X		
Storm water Management and Sediment and Erosion Control Plan Review	Construction Document	x		X		
Storm water Management BMP Handbook	Construction Document	x		X		
Storm Water Pollution Prevention Plan	Construction Document	x				
Supplemental Attachment	Construction Document	x		x		
Surety Bond Checklist	Construction Document	x				
SWAPP Amendments	Construction Document	x				
Technical Specifications	Construction Document	x				
Value Engineer Deductions	Construction Document	x				
	Construction Document	x				
Statement	Construction Document	x				
Supporting Documentation for cost Proposal Summary	Construction Document	x				
Warranty - One Year Guarantee	construction Document	x				
00201-OSE Standard Supplemental Instruction to Bidders	contract Document	x				

00501-OSE Standard Modifications to AIA A101-1997	contract Document	x				
AIA Document A201-1997 - General Conditions of Contract for Construction	contract Document	x				
00811-OSE Standard Supplementary Conditions	contract Document	x				
Performance Bond	contract Document	x				
00201-OSE	contract Document	x				
00501-OSE- Standard Modification to AIA A101-1997	contract Document	x				
00501-OSE Standard Modifications to A101-1997	contract Document	x				
00811-OSE -Standard Supplementary Conditions	contract Document	x				
Closeout Documents AIA G707, AIA G715, AIA G706, AIA G706A, SE 560C	contract Document	x				

Figure 1: Project Management

Figure 2: Document Process Flow